

Application Number 10/712,164
Amendment dated December 17, 2007
Reply to Office Action of August 15, 2007

REMARKS

Applicant thanks Examiner Dharia for his helpful comments during the telephone interview with Applicant's attorneys held on October 16, 2007, and for mailing the Interview Summary to Applicant's attorneys on October 19, 2007. During the telephone interview of October 16, 2007, Examiner Dharia reaffirmed the position that claims 9-13 are not currently patentable, but suggested that independent claims 9 and 12 be amended to include similar claim amendments as allowed independent claims 1 and 5 in order to overcome the rejections of claims 9-13 based on Hirai, *et al.* (United States Patent Number 5,953,002). Applicant's attorneys proposed claim amendments similar to those claim amendments herein. Accordingly, it is believed that amended claims 9 and 12 further clarify the distinctions between the present invention and Hirai, *et al.* With these claim amendments, Applicants believe that the present invention as claimed is allowable over Hirai, *et al.*

During the Interview, Examiner Dharia also offered to participate in another telephone interview. The Applicant hereby requests a telephone interview with the Examiner before any action is taken on this Response.

Applicant notes that the Office Action indicates that claims 1-8 are allowed.

Claims 9-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Hirai, *et al.* (United States Patent Number 5,953,002). In view of the amendments to the claims and the following remarks, it is submitted that the claims are allowable over Hirai, *et al.* Accordingly, reconsideration of the rejections of claims 9-13 is respectfully requested.

Independent claim 9 is amended herein to clarify that a driving method of a super twisted nematic (STN) liquid crystal display (LCD) driver that drives an STN LCD comprises (c) receiving a frame flag signal which inverts a level of a liquid crystal polarity inversion signal in a frame and generating a liquid crystal polarity inversion signal in the frame that inverts a polarity of an STN liquid crystal of the STN LCD only once in the frame when the number of sub frames in the frame, counted in step (b), is n.

Independent claim 12 is amended herein to clarify that a driving method of a super twisted nematic (STN) liquid crystal display (LCD) driver uses an nFRC method, wherein n is a natural number, comprises: (a) counting a number of sub frames in a frame; and (b) inverting a polarity of an STN liquid crystal only once in each frame when the number of sub frames in the frame, counted in step (a), is n.

With regard to the rejection of independent claim 9 under 35 U.S.C. 102(b) based on Hirai, *et al.*, it is submitted that Hirai, *et al.* fails to teach or suggest receiving a frame flag signal which inverts a level of a liquid crystal polarity inversion signal in a frame and generating a liquid crystal polarity inversion signal in the frame that inverts a polarity of an STN liquid crystal of the STN LCD only once in the frame when the number of sub frames in the frame, counted in step (b), is n, as claimed in amended independent claim 9. The Office Action at pages 2-3 refers to Hirai, *et al.* at Figures 4 and 5, and column 14, lines 28-52, column 19, lines 22-60, column 9, line 56 to column 10, line 11, column 13, lines 63-65, column 31, lines 64-66, and column 32, lines 20-27, 41-54 as disclosing voltages being inverted in every frame. These sections in Hirai, *et al.* disclose an FRC method in combination with an amplitude modulation (AM) method, being applied to form gradation levels of equal intervals while increasing a number of gradation levels (see Hirai, column 9, line 48 through column 10, line 11). Further, Hirai, *et al.* discloses sub frame counters 2 and inversion signals applied to a calculation circuit 3 to invert display data output from the sub frame counters (see Hirai, Figure 4 and column 14, lines 37-52). However, there is no teaching or suggestion in Hirai, *et al.* of receiving a frame flag signal, which inverts a level of a liquid crystal polarity inversion signal in a frame and generating a liquid crystal polarity inversion signal in the frame that inverts a polarity of an STN liquid crystal of the STN LCD only once in the frame when the number of sub frames in the frame, counted in step (b), is n, as claimed in amended independent claim 9.

Hirai, *et al.* further teaches that 2 frames (4 subframes) can be used in forming gradation levels of equal intervals while increasing gradation levels (see Hirai, column 9, line 53 through column 10, line 4). Hirai, *et al.* further teaches that the polarity of signal voltages can be inverted

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every 13 selection pulses (see Hirai, column 32, lines 21-22. However, there is no teaching or suggestion in Hirai, *et al.* a polarity of an STN liquid crystal of the STN LCD being inverted only once in a frame when a counted number of sub frames in the frame is n , as claimed in amended independent claim 9.

With regard to the rejection of independent claim 12 under 35 U.S.C. 102(b) based on Hirai, *et al.*, it is submitted that Hirai, *et al.* fails to teach or suggest that a driving method of a super twisted nematic (STN) liquid crystal display (LCD) driver uses an nFRC method, wherein n is a natural number, comprises: counting a number of sub frames in a frame; and inverting a polarity of an STN liquid crystal only once in each frame when the number of sub frames in the frame, counted in step (a), is n , for reasons similar to those described above with regard to claim 9.


Accordingly, reconsideration of the rejections of claims 9-13 under 35 U.S.C. 102(b) based on Hirai, *et al.* is respectfully requested.

In view of the amendments to the claims and the foregoing remarks, it is believed that all claims pending in the application are in condition for allowance, and such allowance is respectfully solicited. If a telephone conference will expedite prosecution of the application, the Examiner is invited to telephone the undersigned. The Applicant hereby requests a telephone interview with the Examiner before any action is taken on this Response.

Respectfully submitted,

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